

ABSTRACT

Operation of a system for injecting a predetermined amount of a secondary fluid into a primary fluid stream uses a liquid additive injection pump driven by a fluid powered motor driven by the primary fluid stream can be selectively suspended by an on/off switch mechanism. The fluid powered motor includes a housing enclosing a differential pressure piston assembly having a piston movable within a housing between upstroke and down stroke positions; a valve mechanism establishing a differential pressure within the housing to produce movement of the piston; an over-center mechanism coupled to the valve mechanism to toggle the valve mechanism between open and closed positions; and an actuating shaft coupled to the over-center mechanism, the actuating shaft including a piston upstroke stop that causes toggling of the valve mechanism at an upstroke position of the piston during normal reciprocating movement of the piston. The on/off switch mechanism axially displaces the actuating shaft relative to the housing such that the piston upstroke stop assumes an offset position when the on/off switch mechanism is in the “off” position whereby the piston upstroke stop can not be engaged to cause toggling of the valve mechanism when the piston reaches its upstroke position. In the “on” position, the on/off switch mechanism positions the actuating shaft relative to the housing such that the piston upstroke stop can be engaged to cause toggling of the valve mechanism when the piston reaches its upstroke position.